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### Comment

THE costs of distribution are well known to be unwarrantedly high costs in the whole economic process. The obviousness of possible economies in production has resulted in dramatic improvements at this stage where the self-interests of individual owners have clearly shown the lines to be followed.

The individual manufacturer can undoubtedly also effect certain economies in distribution methods. But increasingly we are understanding that the major economies to be secured in distribution costs—elimination of cross hauls, dumping of over-stock, high rate of failures among retailers, regional division of selling territories, co-operative wholesaling and advertising, cheaper credits, carrying charges on peak manufacturing equipment—these and other items cannot usually be coped with by the individual corporation working alone.

They are costs of the competitive process carried to excess, of bad planning, of weak trade association functioning,—of economic infantilism in general.

They are fundamentally costs of making the producer rather than the consumer central in economic thinking. A change in focus is gradually occurring in the thinking of producers and distributors. And it is being accompanied by a remarkable increase in consumer self-consciousness—a factor only in the beginning stages of its possible future importance.

The science and art of management are only half a reality until they include in their thought and action questions of the economical management of the market and for the market.

Our Society is to be commended on initiating a functional division in this field which is so fertile for exploration and study. Approached dispassionately and objectively such study should yield new capacity to deal efficiently with an urgent managerial problem.

### Management Conference

Attendance is urged at the management conference to be held at The State University of Iowa in Iowa City on Friday, April 8, 1938.

The conference is sponsored by The Society for the Advancement of Management, The College of Engineering of the University of Iowa, The Tri-Cities Section of the American Society of Mechanical Engineers and The Iowa Manufacturers Association.

See program on page 67.

# The Call for Industrial Statesmanship<sup>1</sup>

By H. S. PERSON

Consultant in Business Economics and Management, New York

**B**Y WAY of introduction I should like to recommend that you read, if you have not already done so, two books which are notable for their pictures of the present state of our economy. One is "The Modern Economy in Action" by Caroline F. Ware and Gardiner C. Means. This book is the best simplified analysis of our present economy for the non-professional reader. The other book is George Soule's "The Coming American Revolution." The title is forbidding; it suggests scenes of violence and bloodshed. However, the bark is worse than the bite. It is Soule's thesis that generally revolution is not accompanied by violence; that violence comes after revolution when some group attempts by force to undo the revolution. The book is a very calm analysis of the extent to which there has been change in our economy during recent years. Both books are written in simple, clear styles that make it a pleasure to read them. One who can supplement a substantial business experience with the perspective and analysis offered by these little books, has a good basis for intelligent, creative thinking about current economic problems, and for intelligent exercise of the rights of citizenship.

## Industry's Broadened Leadership Responsibilities

What is meant by the word "industry"? As commonly used it connotes the manufacturing of goods. But as made part of the title of our discussion, it means more than the fabricating industries. It includes also the financing that is behind these industries. We often speak of our capitalistic economy as an "industrial capitalism." It is also a "financial capitalism." There are really two capitalisms. Industrial capitalism is concerned primarily with private property that has the form of production goods, and seeks its profits through creation of goods and services to supply consumer demands. Financial capitalism is concerned primarily with the custodianship and investment of free capital, and seeks its profits through interest and gains from

## *Industry's Leadership Will Determine the Survival of Democracy.*

trading in the equities of corporate enterprises. While the greater area of our total economic activity is occupied by industrial capitalism, that area has come to be dominated by financial capitalism. It is this financial capitalism, through its vast control mechanisms, which characterizes our economy today.

The interests of industrial and financial capitalism are only partly identical. Industrial capitalism seeks profits as a reward for adding to the national income. To achieve its objectives it desires as much stability as possible; it desires precision and economy in its operations. It prefers large volume in production and is willing to gain that by lowering prices as technological progress makes it possible. Financial capitalism, on the other hand, while it requires a certain degree of stability in industrial enterprises as a foundation on which to work, seeks its gains not so much as a reward for increasing the total social income but more as a result of shifting income and property from one group of owners to another, and to these ends favors a considerable degree of instability and opportunity for speculative financial operations.

When we refer to "stable" and "stability" we do not mean a static society. We have in mind, rather, relative stability—a moving equilibrium—the stability of the bare-back rider, of the ship at sea, of the airplane in flight—progress without confusion and violent maladjustment and readjustment.

In respect of these two types of capitalism it is obvious that the interests of labor vary considerably. Labor is interested in processing; in continuity of processing and employment; in the stability that makes continuity possible. Its interests are in industrial capitalism more than in financial capitalism; in an industrial capitalism which drives straight towards its objectives without the interferences of financial capitalism.

What is meant by "leadership responsibilities"? I have only one major point to make in my reference to the nature of leadership. I imagine Dr. Metcalf has in mind for this discussion the leadership responsibilities of owners and managers, for he has spent a rich and fruitful life in trying to inspire owners and managers

<sup>1</sup> Abstract of a discussion at a conference held December 3, 1937, under the auspices of the Bureau of Personnel Administration (Henry C. Metcalf, Director). Printed by permission.

to a higher, broader and more effective sense of their leadership responsibilities. But we must also be aware that there are leadership responsibilities resting on workers, and capacity in them to assume their responsibilities. It is true that because of educational environment, social heritage and more favorable opportunities our leadership class is chiefly that of owners and managers. We must therefore look towards a higher type of leadership in that particular group. But what one might call a "monopoly" of leadership by this group is rapidly disappearing, and we must think of other groups coming into positions of nearly equivalent opportunity for leadership.

Those who constitute the working class presumably have as good a biological inheritance. It is because of differences in opportunity, environment and social heritage that workers have become the employed and led class, the class less capable of offering many leaders. Because of factors largely outside of their own control, they have come to this position. But a new factor in the situation must be recognized: that is the capacity of the employed class to organize and through organization to select from within its own group individuals who have as great a capacity for leadership as owners and managers; individuals with exceptional biological inheritance which has had a discipline and development that perhaps no one in the owning or managing group gets. As a result, we find individuals selected as leaders in the working group who have a capacity for understanding and leadership which is the equal of the best in the ownership and managing class. Occasionally we have a Sidney Hillman who is the statesman of an industry.

Therefore in thinking of leadership responsibilities we must include workers among the groups qualified to offer participation in leadership. It has come to my attention recently that, with a wisdom born of long experience, a British ministry refuses to legislate for stabilization of an industry on request of employers only; that it demands some prior progress towards stabilization through voluntary agreements between employers associations and unions; that it does not consider an industry as completely and properly represented if labor is not recognized by employers as of equal importance in determining or suggesting policies for the industry. It must be so in a democracy which has passed the stage of pioneering exploitation.

The responsibilities of leadership have gradually been broadened from the early type of responsibilities characteristic of the sellers' market which we enjoyed for

so many decades down to and through the World War. The sellers' market had its particular influence on motives, desires, interests and opportunities of individuals, and therefore conditioned to a very large extent this matter of responsibility. Under the conditions of the sellers' market management was interested primarily in the profits of a market which, it appeared, increased and would continue to increase spontaneously. The United States was a pioneering country with vast natural resources and a man-power augmented not only by a natural increase in population but also by a still greater increase through immigration. Individuals could go out and get title to land or some other natural resource and transfer the social capital acquired to individual account. This caused continually increasing credit and inflation. There was an ever-increasing market, consumption and purchasing power. Through a century there was this gradual, stimulating, wholesome inflation. With conditions of easy business and easy profits, success was presumptive, and the interest of management was focused primarily on profits and growth, the interest of workers primarily on wages and details of working conditions. Nature was so generous that large problems of industrial policy and statesmanship did not come to the front.

That was a period which came nearest to what the classical economists would regard as a market of perfect competition. That was a period in American history when we had present to a considerable degree the circumstances which are the bases of the assumptions of the classical economists: that the market is the central force of our system through which, in its flexible manifestations, adjustments in economic relationships are effected.

The present stage of our economy, in contrast, is a stage imposed on us by a buyers' market, which has been with us since the end of the World War. Some particular markets, of course—the markets for automobiles, rayon, and other new products of popular favor—enjoy sellers' markets; but in the staple industries of the United States today the capacity for production has grown beyond the current effective purchasing power of consumers.

In this market management of course continues to be interested in profits, but to that interest is added a concern of ownership and management for resumption of growth and even for saving the investment. That is very much in the minds of both financial capitalism and industrial capitalism today. It presents new aspects of leadership responsibility for ownership and manage-



ment. Also labor's interest and area of responsibility has extended so that it not only includes the earlier interests of wages and immediate working conditions but also the desire for status and resumption and continuation of opportunity for employment. Thus ownership's, management's and workers' interests and responsibilities tend to converge.

I believe that labor's desire for status is accounted for by an instinctive sense and by perception that organized labor must be recognized as a functional factor in our social-industrial processes; that it must participate in the solution of problems of an economic nature which affect resumption and preservation of opportunity for employment. Although there are still some serious conflicts of interests between owners and workers in the present stage of our economy, economic problems have become so serious that the functional participation of every group is required to effect an adequate solution.

A stage in our economy has developed which extends the scope of leadership responsibilities to consideration of the problems of an unstable economy. This means the emergence of two major problems: first, the creation of a balance in this economy which will promote an abundant consumption that supports livelihood activities by everyone; and second, the preservation of our democracy.

We are beginning to realize that we no longer enjoy the market of relatively perfect competition—if it ever existed—upon which the older economists premised their reasoning; that the market as a central point where numerous forces straightened out all economic relationships no longer exists. In the face of new problems of this nature, the problem of responsibility and leadership is lifted to a much higher plane than ever before.

The only possible leadership that can solve these problems, if they can be solved at all—the problem of creating a balance, of establishing an abundant consumption to support livelihood activities on the part of everybody, and the problem of saving democracy—is a joint leadership among the functional sectors of our industrial and social life. I am thinking for the moment of joint leadership on the part of owners and managers on the one hand and workers on the other; but probably this idea of joint leadership will have to be enlarged to include other functional groups, such as the consumers.

### Major Objectives

What are some of the major factors comprehended in these enlarged leadership responsibilities? In the first place, there are several important aspects of the large problem of establishing a balanced economy. Fundamental to everything else in securing a balanced economy is the maintenance of the market. If we are to provide livelihood opportunities for everybody and eliminate unemployment, we must do it by establishing and maintaining a market for the products and services of livelihood activities of everybody. Maintenance of the market means maintenance of a large and widely distributed purchasing power. It means recognition of the fact, as well as the theory, that all economic activity starts with the consumer. We in the United States, because of our peculiar economic circumstances as a pioneering people with abundant resources and an increasing population, got into the habit of assuming that increase of purchasing power is an automatic process as natural as the air we breathe; that production is all we have to attend to. We are now compelled by force of circumstance to revise our thinking to a recognition of the fact that economic activity starts with consumption and effective demand; that these must be generated by the maintenance of widely distributed purchasing power; that this generation is through high wages and low prices; that these considerations raise large problems for ownership and management in their leadership responsibilities and make it imperative that management take labor into partnership as leaders in the achievement of this particular objective.

The second problem in achieving a balanced, progressive economy is efficient production. This means not merely efficient production in terms of an internal economy of an individual enterprise, but in terms of adjustment of its production to demand and of all production to total demand. It means that each industry shall produce all, but not more than, its category of consumption. It means the efficient conserving of materials, not only by the management of an individual plant in its internal relationships, but in respect to all material being consumed in any industry and in the United States as a whole. It means also adequate equipment. But here again not only adequacy within an individual enterprise, but adequacy in relation to the consumption and demand of each industry and of all industry.

The problem of more efficient production means also competent management, which to me connotes scientific management, and it means making all workers skilled and satisfied workers.

Some interesting questions are raised as to the function of capital goods industries in our present economy, and whether or not many of us may not have gone off the deep end in worship of certain classes of capital goods industries to the neglect of others.

The establishment of a balanced, progressive economy requires continually increasing productivity. There can be no such thing as a static society if we would have social progress. A great deal of the classical economic reasoning was based on the assumption of a static economy, and a great deal of our present thinking is based on the assumption that if we do something to bring about a situation of stability we shall have a static state and need pay no more attention to such problems as we are now discussing. But human nature is such, human intelligence is such, human associations are such, human society is such that we cannot have a static society. We are thinking about something which cannot exist, if we permit ourselves to think in that direction; we either go backward or forward. To become static is to decline. Our goal is continuing progress kept in balance, not an ultimate static industrial society. Technology must advance. We could not prevent its advance if we tried. The problem is one of regulating that advance.

Capital goods industries must be maintained in order to permit technological advance and have its effects available in higher standards of living, but capital goods industries must be maintained for that purpose under controls. Capital goods industries can go too fast, and I have a deep-seated suspicion that the present debacle in our economy has been in considerable measure the result of unmeasured and uncontrolled advance of capital goods industries. Capital goods industries must be kept in adjustment to an increasing purchasing power just as must the consumer goods industries. Capital goods industries must produce durable facilities that will create social income—genuine social income—and financial capitalism must discontinue the practice of producing durable facilities too rapidly for their assimilation into the economy, so that they fail in capacity to create income although they remain durable and heavy as debts, forcing distribution of social income in a manner that impairs purchasing power.

Finally, to maintain a balanced, progressive economy, there must be political stability. A great many people think of economics as entirely distinct from politics, and our economic society as entirely distinct from our political life. As a matter of fact every individual is an integrated whole; an association of individuals is an integrated whole. There is no such thing as taking one

part of an individual's or a society's life and laying it aside as having no influence on any other part. There is always a continuing relationship between what we call political and what we call economic.

From a practical point of view every worker is a consumer and a voter; every consumer is a voter. It is quite impossible for us to expect that the consumer will separate his irritations as a consumer from his capacity to influence the economic system as a voter; and it is quite irrational to expect that workers who may have been irritated in their work relations will throw these irritations to one side and say that they have no business to allow them to have influence in the exercise of the franchise. We do not break up our lives in that way. Any attempt to separate the economic from the political is artificial. They are merely different facets of the same complex whole.

Therefore the second major objective comprehended in the enlarged leadership responsibilities is preservation of our democracy. Autocracy or dictatorship can set up the frame and instruments of an efficient economy, but eventually political instability will render that economy ineffective. There appears to be an illustration of that today in the intensive campaigns that Italy and Germany are undertaking to achieve certain political objectives. The apparent internal stability in those countries is probably a stability that is tentative, depending on the governments' achieving external objectives that appeal to the emotions. A political situation which must depend on these appeals is unstable. There develops tension among forces that is likely to cause explosion.

Democracy appears to have given way in some European and South American countries, but those countries had never really achieved democracy. There is less chance for a dictatorship or oligarchy to prevail in the United States where the people have long been steeped in the traditions and practices of participation in political affairs and will not easily relinquish that right.

Yet in a well-established democracy it is possible that concentration of power will be permitted to develop because of complacency and carelessness, and these centers of power may succeed in establishing by some maneuver a transitory autocracy, restoration from which would be effected only by much pain and suffering.

Because our political and economic lives are inseparable, and because for the past century and a half we have been forming the habits of political democracy, it

is all the more obvious that to achieve a balanced, progressive economy we must acquire the goodwill of workers as workers and as voters. I have cited workers because we are now concerned with industry, but we could say the same for farmers. This means that industrial ownership and management must accept these groups as equal partners in leadership responsibility; in the determination of policies and programs.

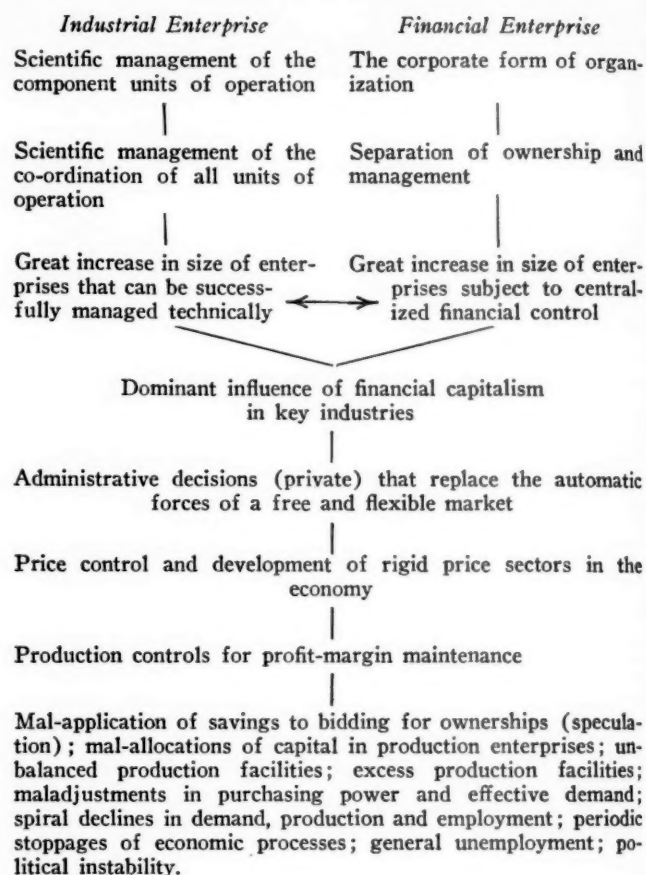
#### Critical Period for Democracy

Today in the United States appears to be a critical period for democracy; not only for industrial democracy but also for political democracy. We have today in the United States—and this goes back to my initial distinction between industrial and financial capitalisms—the acquired power of concentrated group control through financial ownership and influence. Berle and Means have told you of the tremendous concentrations of corporate control which have taken place in the past quarter century. This concentration is startling. You must recall that it does not take one hundred per cent or fifty-one per cent or perhaps even twenty-five per cent concentration of financial control to have the power to control an enterprise, an industry, or all industry.

In a paper I am preparing I present this matter of concentrated power in the accompanying graphic form; it indicates how scientific management in industrial capitalism and the corporate form of organization in financial capitalism have together made such concentrations possible.

This concentrated power today manifests effective tangible influence by the use of concentrated funds and various devices in the nature of equities which give control over industrial operation; and they manifest a vast intangible power through propaganda. By propaganda I do not mean the getting together in a darkened room and hatching up some carefully formulated scheme of publicity to influence business. This power of propaganda grows out of the fact that the American worships bigness, and the utterance of a leader in big business is echoed and reechoed until it has the impact of a thousand speakers. There are frequent utterances of this type in current newspapers; that gives some idea of the tremendous power yielded by certain individuals whose words are taken as gospel.

At the present time in the United States we appear to be experiencing more intense propaganda of this kind than ever before, with the exception of the openly organized propaganda to inspire a united front for the



World War; and I think that propaganda was more intense only in its organization and other tangible aspects, and was not as penetrating an influence on the beliefs and conduct of people.

An illustration of that propaganda is the explanations for the present recession in business appearing in reports of speeches and in columnists' syndicated articles. No other formulation of reasons for an economic situation ever commanded such concentrated attention. The recession has been caused by capital gains taxes, by undivided surplus taxes, by restrictions upon the freedom to issue and trade in securities, by government competition with business, and so on. When you count them off on your fingers you find that they call for reversal of essentially all of such progressive steps as have been achieved during the past four or five years towards eliminating the forces in our economic life that make for speculation, inflation and depression. This propaganda has been motivated by the idea that complete restoration can come only by clearing obstacles from the way of financial capitalism.

There is no reference to fundamental aspects of the



problem. For instance, I think the most fundamental thing is this: We got out of every previous depression by writing down our capital structure pretty largely through the bankruptcy route. In the past not only has labor had to stand the gaff through unemployment and loss of income, but ownership has also had to stand its share of the gaff, along the bankruptcy route and the writing off of capital values. After enough inflated valuations had been written down, and much property had passed to new owners unencumbered, business became stimulated and started up the spiral again.

When this depression descended upon us, it was probably generally assumed that we would go through the same process; but those in authority—and this began before Mr. Roosevelt came to Washington—felt that the country would not be able to go through such a period of deflation without complete collapse; that the people of the United States would not again stand for the pain of the bankruptcy route. The result was the creation in January, 1932 of a new institution in the American economy—the Reconstruction Finance Corporation. With the R.F.C. we turned our back on the old method of getting out of depressions. It was decided to use collective credit to shore up the credit of large institutions. Its program was at first based on the philosophy that if you take care of the institutions at the top, the benefits will trickle down to those at the bottom. They did not trickle. So the principle of the R.F.C. to shore up equities was extended to the lower strata: to small banks; to house owners; to farmers.

Having turned our back on the only method we knew of getting out of depression, and having no experience with other ways of achieving that purpose, we have been making experiments. We have not yet succeeded in finding an equivalent for the old method, and the

result is advance, recession, advance, recession, with steady but slow net gain. But last spring industry became impatient, jumped the gun, over-scheduled and over-produced in terms of the rate of the trend in improvement, and temporary recession became inevitable.

In addition to over-scheduling and over-production, over-pricing in terms of consumer purchasing power was simultaneously indulged in. Many critical prices are now not the result of the play of forces in a competitive market, but the results of administrative decisions. Leaders in business took advantage of this fact, and extended the practice of price fixing in the direction of higher prices. Pressure groups even succeeded in securing legislative sanction for the fixing of retail prices by manufacturers. Under any condition price-fixing is fatal in the long run; under the conditions of a laboring ascent from depression it is immediately fatal. Recession became inevitable.

None of the current propaganda refers to these matters. Of course revival of the capital goods industries is essential. But not in the manner and to the degree characteristic of the twenties. The fundamental facts to which I have just referred, and certain others to which I made earlier reference, must be regarded. There must be adjustment to these by the capital goods industries. Their restoration must be measured and planned. We cannot add a huge superstructure of new debts to the huge structure of debt—capitalization—still remaining.

Yet current propaganda is aimed at removal of impediments to the open way for financial capitalism's conventional activities. That way lies speculation, inflation, depression—perhaps then disaster to our democracy.

#### Iowa City Management Conference Program Friday, April 8, 1938

Opening Addresses by **Francis M. Dawson**, Dean of the College of Engineering, University of Iowa, and **Edw. A. Kimball**, Manager, Iowa Manufacturers Association.

"The Payment of Wages" by **Ralph H. Landes**, Industrial Engineer, Western Electric Co., Chicago, and **J. K. Loudon**, Industrial Engineer, Owens-Illinois Glass Co., Toledo.

"Motion and Time Study" by **W. A. Reinhard**, Director of Department of Engineering, American Institute of Laundrying, Joliet, Ill.; **L. P. Persing**, Supervisor of Wage Rates, Fort Wayne Works of General Electric Co., and **Ralph M. Barnes**, Professor of Industrial Engineering and Director of Personnel, College of Engineering, University of Iowa.

"Skills and Satisfaction" by **Dr. Lillian M. Gilbreth**, President, Gilbreth, Incorporated, Montclair, N. J., and Professor of Management, Purdue University.

Address at dinner by **Eugene A. Gilmore**, President of the University of Iowa.

"Selling a Work Simplification Program to Management and Men" by **Allan H. Mogensen**, Consulting Editor of *Factory Management and Maintenance*, and Consultant on Work Simplification, New York City.

For further details write to:

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# Inventory Control<sup>1</sup>

By SAM A. PECK

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## Review of Basic Principles

**B**EFORE entering into a detailed discussion of the relation of inventory control to management policy and profitable operation I think it would be well to review some of the basic principles underlying the theory of inventory control. The first basic principle is concerned with the "cost of carrying inventory." It is now generally admitted that the cost of carrying inventory is a measurable, definite factor in the operation of any business. Recent studies indicate that it costs from 17 to 25 per cent of its value to carry an inventory; ranging from 15 per cent to 25 per cent for manufacturers, 18 per cent to 20 per cent for jobbers and 17 per cent to 19 per cent for retailers. Entering into the cost of carrying inventory are many items such as interest, taxes, insurance, housing, handling, deterioration, breakage and obsolescences. In a study we made some time ago, these factors totalled to 22 per cent for an average group of manufacturers and this figure represents a fair cross-section of the costs of carrying inventory.

The next basic principle is, that inventory control is the foundation for operating control of any typical business—by that, I do not mean control of money, but control of the quantitative factors with which a business is concerned, such as, material procurement, production schedules, shipping schedules, the physical balances of raw, processed, and finished inventory, and the physical facilities for handling the inventory.

The final basic principle relates to the fiscal control of a business. Here we are concerned with money or values, which become the basis for determining the profitable or non-profitable operation of the company, the amount of capital required for this particular factor, and the cash value and liquidity of the inventory itself.

These three basic principles furnish the spring board from which I will later dive into the managerial aspects of inventory control!

## *Inventory Control is related to Management Policy and Profitable Operation.*

control; not so much from the standpoint of the mechanisms or procedures, but more particularly as to its relationship to the management of a business. How closely related is the care and control of inventories to the fundamental principles of management is not generally recognized. The profits of a manufacturing concern are largely dependent upon the continuous and unbroken operation of the producing departments, because profits originate in the manufacturing departments, and not in the bookkeeping machines and filing equipment. Therefore, the economic operation of the manufacturing departments requires that they be supplied with materials, consistently and continuously with respect to the production and sales policy of the company. Unfortunately, the very necessity of maintaining a sufficient supply of the material items needed for factory operation tends to produce a by-product of over-supply and waste. Without effective control a large amount of working capital can be quickly invested in materials which will not be used for months or even years; and in some cases possibly not at all, through style obsolescence caused by sudden shifts in the market demand. Also without adequate control, materials may be transformed into more of one kind of finished parts and less of another than is actually required by the demands of the market, with a result that sales may be lost and orders for manufacture held up. It will thus be seen that the control of inventories is fundamental not only to a steady progression of a production program but also to the satisfactory attainment of a sales plan. Consequently, inventory control in its broadest aspect includes the control of raw materials, work in process, finished goods and supplies. The ideal conditions of the inventories of a plant would be those in which the turnover of raw materials matched the time needed to procure them, in which all finished parts were assembled at uniform intervals into salable finished stock, and in which no items remain unsold for any length of time.

The efficiency of a plant and its management frequently can be gauged by an inspection of its in-

## Current Trends

First we are interested in the current trends in inventory

<sup>1</sup> Paper presented at a meeting of the Cleveland Chapter of The Society for the Advancement of Management, November 5, 1937.



inventories, which are the shadow reflected by the management policies in this respect. There is a constant tug-of-war between the sales and operating departments on one hand which believe that an effective carrying out of all their programs can be attained only by large reserves of materials and products, and the financial department of a company, which believes that money tied up in inventory is sterile and a sequestration of profits which should be in the pocketbooks of the stockholders. Modern practices in inventory control methods are leading more and more to those methods which constantly expose the status of the inventory to management's eyes.

The current trend in determining the physical inventory position is largely towards visible perpetual inventory systems of the card or loose-leaf types, in which item balances are continuously checked and a book record taken only at the close of any fiscal period to determine the operating Profit or Loss; as opposed to the older method of taking detailed physical inventories at stated periods to determine the inventory position of the company.

"Perpetual inventory" is a phrase that dates back for many years, but unfortunately is a condition that is too infrequently found.

In spite of the constant preachments of the executives and consultants concerned with the accounting phases of business, the custody of inventory still remains only too often in an embryonic stage. It is still not unusual to enter a plant and find valuable materials and products unguarded and subject to theft or destruction. I know it is bromidic to say inventory represents cash (sometimes in a negotiable form) but it is still an objective to be attained, by both accountants and engineers, to make management fully realize that inventory should have the same safeguards thrown around it that the cash and bank account of the company have.

Due to the rapid changes in basic standards, the trend in accounting indicates a growing problem in relating the Profit and Loss statements to inventory through standard costing. To secure the cost variances in operation that are essential for effective management control there is a movement to throw standard costing into the operating controls of the business rather than into the fiscal controls; and carry standard costs on only direct material directly into the operating statements of the company, in order to tie in the total inventory directly to the Profit and Loss position of the company.

From an accounting point of view a question properly asked is, "Just what is the purpose of inventory control?" Essentially, it is to enable the management to determine its cost of sales, so that a Profit or Loss statement can be produced. When a Profit or Loss statement is produced by a ratio determination of expenditures to sales income, it does not always provide a proof of the costing used, nor the application of working capital to disbursements. Opinion seems to be divided, one school of thought holding that unless standard costing of sales is worked through the cost of production into inventory and out again, the Profit or Loss statement has only a statistical value and the only accurate method is by inventory closing. The other school of opinion holds that the same accuracy of result inherent in the inventory method can be obtained by the standard cost ratio method if the basic standards for labor, material and overhead have been precisely set and the variances accurately determined.

To the engineer this problem resolves itself down to a difference between Tweedle dum and Tweedle dee. This is because in the final accounting, the U. S. Treasury Department requires annual Profit or Loss determinations through inventory washout, and for managerial control any reasonably accurate interim statement is satisfactory. As long as the *apparent* variance in the inventory balance is less than 2 per cent, the ratio method of making up Profit and Loss statements has sufficient accuracy value to be used for managerial control.

#### Operating Aspects

The operating aspects of inventory control involve four basic functions: namely, the material procurement relationship, the application of inventory control to process methods, the physical mechanism for inventory control, and the organization for inventory control. In the function of material procurement, the relationship required is that of having available at all times the right quantity and quality of materials. Without inventory control the purchasing department functions on hunch and price differentials, buying usually from the standpoint of expediency or persuasive price salesmanship.

In the application of inventory control to process methods, several important functions stand out clearly. First, to care for materials waiting use through proper custody and placement. Second, to determine the material requirements by a proper correlation to the production and sales program. Finally, to furnish cost of materials and supplies used in factory operation so

that there is a complete realization of the values employed in processing these materials. With proper application of inventory control to process methods it is actually possible to reduce costs and improve labor's efficiency by having exactly the right kind of material available at the right time. Hurried substitutions requiring additional labor or different facilities than would ordinarily be used in that particular operation are costly.

The mechanisms for inventory control have been highly developed from the standpoint of simplicity and effectiveness, but unfortunately management has been either unwilling or unadvised as to these developments with the negative result that antiquated methods of recording inventories and establishing control are still widely extant. Progressive management leans to visible, accessible, easily interchanged records, maintained in that division of the company responsible for the control of movement of the product through the plant. This has taken the form, in many cases, of the loose-leaf visible-edge binder sheet. The growing application of this mechanism would indicate it is satisfactorily supplying the need for a more effective mechanism of control.

Who should have jurisdiction over inventory control? This question can best be answered by saying that circumstances alter cases. But without attempting to dodge the question, the basic assumption can be made that inventory control *must* come under the jurisdiction of the *operating* division of a business—not the financial. There are some exceptions, of course, but they prove the rule. Within the operating division there is argument as to whether the purchasing department, production department or the manufacturing department should have jurisdiction over the inventory. But, except for very special circumstances concerned with the internal administration of the business, the most satisfactory place for inventory control is in the production department. In considering this placement of inventory control, it must be remembered that we are thinking of the quantity aspects of inventory (and possibly its detailed costing) and not its financial aspects. From that point on, the effects of inventory control will naturally travel through the financial division of the company for any purpose that may be required of it.

#### Financial Aspects

Probably the most interesting aspects of inventory control lie in the financial side of a business. There are

two important considerations which may briefly be summarized as:

1. The effect of inventory control on Profit and Loss.
2. The relation of inventory control to working capital or cash position.

In any consideration of the effect of inventory control on Profit and Loss our basic concern is the salability of the inventory. Inventory control presumes that only salable inventory is produced. Consequently, if the inventory produced is not salable the Profit and Loss result becomes directly related to this particular factor. It follows therefore that management must know at all times the salability of its inventory, and the method of determining it becomes rather simple if an unprejudiced approach is made. The chief instrument used to remedy this condition is to classify (to *age*) the inventory into its logical rate-of-turnover groups. It becomes obvious that if, for example, the average turnover is once a year, and a large part turns only once every five or six years, management has been remiss in correlating its production and sales program, and has automatically stopped itself from realizing the profit it should expect from its business. It is remarkable, in examining the inventory accounts of many companies, how few of them have been aged. Few companies would think of neglecting to age their accounts receivables, yet inventory is only one step removed from receivables (in that it is goods remaining in the hands of the manufacturer instead of in the hands of its customer) and conditions relating to the age of the invested capital and profit in inventories and receivables are identical. It may be concluded, therefore, that the aging of various divisions of an inventory is one of the prime essentials in interpreting the Profit and Loss picture of a company. As pointed out earlier this not only involves its salability but also the actual cost of keeping the inventory on the property. It is not a static item on the books of the company, to be regarded as a temporary diversion of working capital, but must be considered in the same light with accounts receivable.

The second important financial aspect of inventory control is concerned entirely with its relation to the cash or working capital position of the company. A comprehensive survey recently made by one of the largest credit agencies in the country reveals the fact that certain industries are blessed with extremely high rates of inventory turnover and others with extremely low rates. It has been found that the heavy capital goods industries operate on approximately four turns of inventory

per year, whereas the consumer goods industries, such as textiles, average close to twenty-four turns per year. Industry, as a whole, excluding these two extremes, averages between six and twelve turns per year. It is easy to see the affect of slow inventory turnover on the cash position of a company, particularly if the rate of turn is low. This condition becomes more complicated if, with a low rate of turnover, the sales program results in an increasing volume of sales because the cash requirement for inventory purposes can easily pyramid to a condition that will reduce a company to insolvency. Inventory control, therefore, seeks to reduce this financial hazard, and *will* do so if aggressively and consistently applied to the operating plan of the business.

A company recently came under my observation which for years had followed a pattern of inventory control that was based upon maintaining a consistent ratio of inventory to sales. With the turn of business in 1934 a new management took over and was successful in building up sales at a progressively increasing rate that exceeded the before-depression sales of the company. By the end of 1936 the company found itself heavily indebted to the banks, with short term notes, the interest on which practically nullified the earnings of the company. It was decided that an inventory control that correctly correlated the production and sales program was the proper instrument for reducing this financial load. Within six months it was successful in reducing the bank loan to one-third of its previous total and increasing the output of the plant by nearly 50 per cent over any previous record ever enjoyed. There was no magic formula involved in securing this result. It was entirely an application of a basic inventory control principle directed toward improving the financial position of the company and freeing its working capital; which was to maintain a minimum inventory balance through balanced production schedules tied in to a closely forecasted sales program.

The exact figures may be of interest to you. An increase of 44.5 per cent in total units shipped and manufactured was accomplished by an increase of only 10.2 per cent in total hours worked, and 17.9 per cent in total payroll dollars paid. The payroll dollars were larger than the payroll hours because of some overtime and a general wage increase over the period against which the comparison was made. Incidentally, the direct savings in payroll amounted to approximately \$10,900 per month in a plant employing 450 workers.

### Managerial Aspects

When we get into the managerial aspects of inventory control we tread upon very tender toes indeed, because at this point we touch most closely on management's judgment and ability. The three most important points in this phase of the subject may be listed as:

1. Speculation in materials
2. Determination of sales policies
3. Determination of production policies

There still exists too large a school of managers who are confused about the real objective of business—to make profits. They believe that they can out-guess the laws of supply and demand and either enhance operating profit or mitigate operating loss by speculating in the raw materials of which their products are made. One large nationally known industry in this country dealing with a basic metal commodity which it mined itself and converted into consumer products, was for years engaged in a continuous organization turmoil because of consistently unfavorable operating statements. It was discovered that the officials of this company were running the manufacturing end of this business with a fair and consistent profit, but endeavoring to make a still better showing, were buying and selling raw materials on the open market in a purely speculative manner. Unfortunately, they were guessing right less than 50 per cent of the time. As soon as the effect of this financial operation was separated from the other operations of the company the answer became so obvious that the directors lost little time in discontinuing outside transactions in raw materials. The company has shown a consistent although not large profit for the last several years.

The second managerial aspect of inventory control is concerned with the determination of sales policies. It seems obvious that inventories should not be created for a sales program until there is assurance that it will be realized. Yet there are enthusiastic sales managers who are so convinced of their own power of accomplishment that they are willing to set the course of a business directly against the stream of a general business trend. They demand an inventory position that will cover their most optimistic quota. It is at this point that management must step in and exercise the function of inventory control, tempering the enthusiasm of the sales department with the realities of cash and capacity. As an example of my point, a company manufacturing a heavy capital goods unit on a production basis of

*(Please turn to page 75)*



# Tests in Selecting Employees<sup>1</sup>

By EUGENE J. BENGE

Director of Training, Firestone Tire & Rubber Co., Akron

## The Importance of Selection

IT IS an old axiom that labor turnover starts with poor selection. Conversely, good selection will aid in reducing labor turnover and in these days of impending unemployment insurance benefits, any device which will assist in stabilization must be given careful consideration. Of course the primary object of good selection is to find an individual who will be a high producer in his job. There are numerous other considerations, such as the question of high morale which comes from good job adjustment, the availability of promotional timber in an organization, and the availability of manpower worthy of training, whether promotable or not.

Normal selection methods will generally insure a certain amount of high caliber men at the start. However, labor turnover will so often cut into this supply that the ultimate number of employees of high ability remaining on the payroll is not sufficient to take care of organization needs. By raising the percentage of high-grade men initially selected, a corresponding increase in men ultimately remaining can be secured.

It is not generally recognized that there are such wide variations of ability among applicants for a particular vacancy. There is some evidence to suggest that this variation may be as great as from one to four; that is, if the poorest applicant were employed he would turn out one unit of production, whereas the best applicant would turn out four. The problem of the interviewer is to sort out the applicants so that the right man is employed. Employee tests provide a sharp instrument for eliminating unfit candidates. The value of such tests in invariably pointing out the men who will be successful is not so great as the rejective value, but it is obvious that if poor candidates are eliminated the normal interviewing process will have a much higher chance of selecting an outstanding person.

## Selection Methods—Good and Bad

The fundamental of selection is, of course, the interview. This may range from a casual two-minute con-

tact during which time the interviewer passes a snap judgment, to a series of careful interviews during which time the interviewer's judgment is gradually clarified. Not only can there be quantitative contrasts of the time spent in interviewing, but also there can be qualitative variations. One interviewer will shortly establish himself on a plane designed to win the confidence of the applicant, where another can never lower his dignity to this high estate!

So too, the application blank itself may vary. In one case it may constitute a simple record designed for payroll purposes. At the other extreme, it is the initiation of a work history record or series of records. It is desirable to review the application to determine that necessary items are present and that present items are necessary. An item frequently left off the application form which has value is that which tells what occupations the applicant's father, brothers and sisters have held. The inclusion of personal references on the application form has little value as to the references themselves, but has high value by indicating the social status of the references and hence, by implication, of the applicant himself.

In securing references from former employers, it is well to interview or to telephone them if possible. Letters with stereotyped phrases, or form letters, will generally elicit little reference information of value.

It is possible to score the application form. Under this plan the most desirable age, education, kind of experience, amount of experience, marital status, etc., are determined for the job in question. A certain number of points is assigned for each desirable factor and a smaller number of points for variations from this factor. Under a carefully worked out plan it is amazing to note how the summarization of an application blank will assist an interviewer in formulating his final judgment as to the applicant.

Despite the assertions of graphologists, handwriting has not been proved to reveal traits of character. Until such time as scientific findings can be established in this field, those selecting employees will do well to avoid predilections as to the significance of various quirks in handwriting.

<sup>1</sup> Paper presented at a meeting of the Cleveland Chapter of The Society for the Advancement of Management, September 30, 1937.

So too with character-analysis methods. Most of these fall under the head of phrenology, and scientific investigation of phrenological assertions have proven them to be without basis of fact. Characteristics ascribed to blonds are found to exist in brunettes in equal degree. No one has been able to prove that lantern jaws indicate pugnacity, nor that receding chins mean submissiveness. So too, large heads may not indicate great brain power nor large ears unselfishness! Those who engage in the selection of employees will do well to keep away from phrenological tenets incapable of proof.

If the interview itself is unreliable and if photographs, handwriting, and character analyses fail to assist in improving the interview, one is inclined to ask what devices are left to help the interviewer in his judgment. Certainly a physical examination is a highly desirable aid. This should include not only the assurance that an individual is in good health, but should also cover tests for vision and color blindness; necessity for dental work; and possibly strength tests, where strength is a factor in the performance of the job.

So-called mental tests are probably the most advanced contribution which science has to offer in the selection of employees. Generally these tests are of the paper and pencil variety, although numerous other tests are available as well. Since the subject of tests will be discussed in detail below, no further comment will here be given.

Any company would consider itself antiquated if it purchased physical materials without specification and if it did not endeavor by inspection or physical tests to determine whether the materials purchased actually met the specifications. However, when we come to human material, we rarely parallel the two problems. There is no reason why there should not be selection specifications for each job. Such specifications should include the age, education, marital status, experiential, physical, and mental requirements to be met by an applicant. The data on the application blank will indicate the age, education, marital status and experience of the applicant. The physical examination will indicate whether he qualifies in this respect. Finally the mental test or tests will show whether he has the mental requirements which have been found necessary for success on the job.

#### Mental Tests

In the field of mental development, in contradistinction to physical growth, we can trace clearly three avenues along which an individual can develop. These

avenues are the intellectual (abstract intelligence), the social (ability to get along with people) and mechanical (co-ordination of mind and hand in manipulation or assembly of objects).

It should be noted that each individual exhibits a certain development along each of these three lines. Even the most abstruse scholar may have to lecture to his students or explain his theories to fellow scientists, or develop a mechanical device for testing his theories. Even the most extrovert salesman will have to compute discounts or drive an automobile. Even the highly skilled toolmaker may have to reason about the required relationships or get along with fellow employees.

It is the outstanding trait—whether intellectual, social, or mechanical—which impresses us. But we should never forget that most jobs require certain degrees of proficiency in the lesser traits.

In the field of mental tests, most of the work has been done along lines of intelligence tests. Research has shown that occupations have intelligence levels. If an individual is greatly below the level of his occupation, his chances of succeeding are not high; if he is greatly above the average level, his chances of remaining in that occupation and of being happy in it are not high.

It has been shown that within any given group intelligence will be related to income ability. Thus, for instance, in a large group of timekeepers, the more intelligent will tend to receive higher earnings than the less intelligent, unless company policy stipulates a flat rate. So too, among machinists, the more intelligent will tend to earn more.

Intelligence itself is a composite of specific abilities and is not, as is generally supposed, a single ability. Recent research has tended to isolate seven distinct intellectual factors such as facility with numbers, facility with words, memory, visualization, reasoning, etc. The implications of such a classification are great. If we can analyze certain jobs to determine the need for these traits in high or low degree and can likewise test individuals to determine the presence of these traits in high or low degree, then we have a method of vocational guidance or employe selection which can genuinely be classed as scientific. For example, the profile of a salesman's job might reveal a need for high word fluency but low number facility; the profile of an accountant might be the reverse. Hence, an individual who tests high in number facility and low in word fluency will be steered into accountancy rather than into sales.

Intelligence is related to success in many occupations.

Where more specific employment tests are not available, the general intelligence test can often be used with considerable effectiveness. It is particularly useful in selecting supervisors, senior clerks for varied duties, executive assistants and in picking employees for additional training. Army Bureau Test VI (a revision of Alpha), and Otis Advanced Intelligence Examination are in general use.

Clerical tests, consisting of samplings of clerical work, will usually show no better predictions of clerical success than intelligence tests. However, a clerical test

like Test D convinces the applicant that he is taking a test which is related to the job he is seeking.

Success is not determined solely by the kind and amount of intelligence. Social development is important, as is attested by the fact that many executives do not exhibit the highest order of abstract intelligence but are quite capable in their human relationships. There has not been so much work done in the field of testing social development as in the field of testing abstract intelligence. However, research to date suggests that it is possible to measure extroversion and dominance with some degree of assurance.

Because the extrovert gets along well with people he is more prone to be successful in occupations requiring personal contacts. So, too, the dominant individual, unless his dominance is carried to an extreme, will generally accomplish more in his relationships with human beings than the submissive person.

For example, I have prepared a test for salesmen which includes both dominance and extroversion items. When given to company salesmen of known ability, the following results were obtained:

Ability	Salary (Average = 100%)	Score in Sales Test (Average = 100%)
Highest fifth ....	116%	121%
High fifth .....	108	109
Middle fifth .....	100	100
Low fifth .....	88	94
Lowest fifth .....	81	79

Mechanical development is present in some degree in all individuals. The surgeon has it in high degree. The ability to drive an automobile is a manifestation of mechanical development. There are some jobs which require a minimum of this ability whereas other jobs depend to a very large degree on mechanical proficiency. It is possible to measure with fair accuracy the possession of mechanical aptitude but employers generally have not taken advantage of such tests.

Simple skill tests such as tapping, inserting pegs, sorting cards, etc., will frequently predict success in semi-

## CLERICAL TEST D.

Extending—Verifying—Checking—Classifying

NAME \_\_\_\_\_ Last First Initial DATE \_\_\_\_\_

	T
NO. TRIED	
NO. RIGHT	
% ACCY	

### INSTRUCTIONS

On the following pages there are four kinds of problems, as shown in the examples below. Study carefully the examples on this page.

- A VERIFYING A-1.  $27 + 19 = 46$  RIGHT WRONG  
A-2.  $66 \div 3 = 32$  RIGHT WRONG

For practice, underline the correct answer to this problem:

- B EXTENDING B-3.  $27 \times 2 = 54$  RIGHT WRONG  
B-4. 3 dozen pencils  
@ 20 cents per dozen = \$0.60  
B-5. 5 tons of coal  
@ \$7.00 per ton,  
less 2% discount = \$34.30

For practice, fill in the correct answer to this problem:

- B-6.  $1\frac{1}{2}$  dozen pencils  
@ 20 cents per dozen = \$.....  
C CHECKING C-7. 143—134 SAME DIFFERENT  
C-8. 2748—2748 SAME DIFFERENT

Underline the correct answer to this item:

- C-9. 1497—1947 SAME DIFFERENT  
D CLASSIFYING CORRESPONDENCE

"Are all your goods sent by express?"

D-10. ORDER INQUIRY COMPLAINT REPLY

D-11. C. O. D. CHARGE EXPRESS MAIL

The first line (ORDER INQUIRY COMPLAINT REPLY) refers to the nature of the letter. The above letter is evidently an inquiry, and not an order, a complaint or a reply. Therefore, INQUIRY is underlined. The second line (C. O. D. CHARGE EXPRESS MAIL) refers to the method of pay or shipment mentioned in the letter. The above letter mentions shipment by express, so EXPRESS is underlined.

Note that each letter requires two answers to be underlined.

Study this second example:

"The letterman delivered one dozen eggs, that's true, but they were all smashed into a Lake Omelet."

D-12. ORDER INQUIRY COMPLAINT REPLY

D-13. C. O. D. CHARGE EXPRESS MAIL

This second letter is evidently a complaint and also indicates a shipment by mail.

Now underline the two correct answers, or classifications, for this letter:

"Send these goods immediately and charge to my personal account."

D-14. ORDER INQUIRY COMPLAINT REPLY

D-15. C. O. D. CHARGE EXPRESS MAIL

You will have twelve minutes for work, although you probably will not be able to finish in that time. Work rapidly and accurately. If you are not sure of any item, guess. If you cannot solve any item readily, pass on to the next. The examiner is not permitted to answer any questions after you have turned over to the next page.

DON'T TURN OVER UNTIL WORD IS GIVEN



skilled and repetitive jobs with considerable accuracy. So-called "mechanical aptitude" tests, wherein the applicant assembles objects like bicycle bells and electric push-buttons, will prove useful in rejecting poorly qualified applicants for mechanical tasks involving varied activities. The Stenquist and Minnesota Assembly tests are the best known.

We should probably class stenographic and typing tests as mechanical. I have used one such (Steno-Gauge) for over fifteen years, and its power to predict stenographic output is uncanny.

No discussion of mental tests would be complete without a consideration of the question of interests. Within recent years, it has been shown that there are distinct interest patterns for many different occupations. For example, the things that an engineer is interested in differ greatly from those in which the Y. M. C. A. secretary will find interest. It is possible to determine an individual's interest pattern and to say with some assurance that this pattern coincides with the patterns of successful persons in a certain occupation or group of occupations. Interest alone is no guarantee of success in a chosen field, but interest accompanied by potential ability for a given occupation is a strong portent of success in that occupation.

The time required to score interest blanks has largely confined their use to vocational guidance. However, as employers come to appreciate the importance of interest in work, we shall find greater acceptance of in-

terest blanks in employing procedure. The Strong Interest Blank is the best known in this field.

#### Summarizing Selection Findings

Usually it becomes desirable to summarize the seemingly unrelated selection findings. The application blank itself reveals considerable information about the applicant. The interviewer has a number of distinct implications from the interview; these impressions may be recorded in free written comment or in some controlled form such as by the use of a rating scale. The test findings and results of the physical examination belong in the final picture.

We have mentioned that it is possible to score the application blank by assigning points for certain traits. These points are in turn added to a point summary of the ratings as well as the point summaries of the physical examination and the test findings. It will be seen that in general a highly qualified applicant will score more points than a poorly qualified applicant. The weakness of the method is that we do not know the importance of the contributing elements. For example, to what extent should low points on the application detract from high points derived from the test score, or vice versa?

Judgment is fundamental in selecting employees, but judgment should be based on as much factual information as it is possible to obtain. In this way, selection procedures approach the scientific.

#### Inventory Control

(Continued from page 71)

seventy-five units per week during the greatest part of the current year has suddenly been forced to reduce its schedules to twenty-five units per week in line with the general economic level now existing in the capital goods industry. Few economists believe the heavy industries will show much improvement during the balance of the year. The sales manager of this company declares that the economists are all wrong, and that the company should continue producing seventy-five units a week in order to satisfy the orders he knows will be forthcoming in the near future. Fortunately, in this case, an alert management places more faith in the collective opinion and indicators of the outside business world than it does in its sales manager's opinion; and is diplomatically diverting his aggressive volume-mindedness into other channels.

The final factor in this trio of managerial aspects is

that concerned with the determination of production policy. Although this is closely allied to sales policy there are several interesting points of divergence. First of all, management must be concerned with maintaining its operating facilities, which means its organization and plant, as a "going" business. This sometimes requires the manufacture of inventory contrary to the immediate sales picture; or again it may mean a reduction in the operating rate of the plant contrary to the current sales picture. Again the product itself may be of such a nature that it is better to keep it in finished form than in raw material form, in which case the production policy will have no immediate relation to the sales activity. In any of these cases the determining factor lies outside of the conditions of either sales or production policy and drops into the lap of management as a problem in financial control.

# Distribution Engineering

## Management's Key to Industrial Progress

By GUEDE COGHLAN  
Distribution Engineer, New York

**I**NDUSTRY is on the defensive. Industrial management is under heavy fire. What are the hazards confronting management on five fronts? They are (1) Government, (2) Labor, (3) Trade, (4) Consumers and (5) Capital.

### Government

So many of the rank and file have suffered at the hands of imperial industrial management that they have deserted to Government in hopes of fair treatment, relief, and even self-preservation. It is Government's bounden duty (and also good political technique) to propose to the bewildered masses, "Since industry has failed you, let us manage things."

Without assuming here any responsibility for agriculture, except to recognize its great dependence upon industry, we are forced to face the verdict that these mounting derelictions from our much-advertised private industrial empire are the *results* and not the *cause* of Management's short-comings. We can't blame Government for providing much-needed protection. Management's own omissions and commissions have caused the predicament.

So, some have conceived as Industrial hazard No. 1.  
—Our own Government.

### Labor

"Satan findeth mischief still for idle hands to do." From unknowing, innocent childhood right on up to the age of peak development of man's mental capacity we see the truth of the maxim that "Work Makes Work." When work is scarce men's energy is all too often misdirected.

Because we are dealing with extremely vital facts,

*Industrial management, by its own errors of omission and commission, has become vulnerable to Government, Labor, Trade, Consumers and Capital. Our national dilemma is not political, but economic. Management, successful in the past industrial era of mass production development, has failed to recognize a new combination of economic conditions. But there is still hope of converting its five enemies into staunch allies. That hope lies in new engineering in the field of distribution.*

let us study intently the new "power complex" of American labor—both white collar and no collar. It is, I am sure, experiencing excessive self-stimulation. This is due in great part to its suddenly finding its energies without direction. When men are hard at work producing goods or services in a well-chartered industrial economy they have no time, little excess energy and scant thought for vigorous conflict.

We are organized to produce more goods than we have the ability to distribute and the money to buy. The resultant idleness of labor has changed into unrest; unrest into vindictiveness. Labor's predicament is born of industry's failure. Labor's antagonism is the result, not the cause.

When too many employables fight for the crumbs, we tend to incubate Industrial hazard No. 2.

### Trade

Commercial industry has come of age! It is endeavoring to assert its independence. No longer a stepson of industry, it has learned a good many things about buying, about finance, about turnover and, it should be known, about many badly designed and poorly camouflaged high pressure sales policies forced at them by shortsighted manufacturers who should know much better.

We have heard wholesalers and retailers curse their "profitless prosperity"—the more goods they bought and sold the more money they lost. Long suffering as individuals, they have now made definite progress in banding together. And well may they organize, for their life-length is sixty-six months! Their modernized co-operative buying, warehousing, trucking and accounting should make many a manufacturer look closely

at this 1938 joint-establishment—look at it in the field and not through opaque monthly sales sheets.

The manufacturers like to think of trade outlets as "partners" (but junior partners—very). They like to think of wholesale sales in the mass. But, in the light of present-day social intercourse, which business is, each sale, whether carloads or a twelfth of a dozen, is consummated through the mental process of human acceptance. Again, no one wants to be a junior partner all his life. So, as a showing of self-preservation and emotional independence, the trade at large has caused some pretty drastic cuts in the volume of nationally advertised goods by pushing their own private label brands.

They haven't stopped there, however. They, too, have gone to Washington. And they have very successfully lobbied and had enacted legislation, both State and Federal, that forces manufacturers' backs to the wall. This growing crop of commercial laws, like the Robinson-Patman, Miller-Tydings, Feld-Crawford and new trade acts in forty-two states, is bearing three kinds of fruit that industry definitely doesn't want—(a) subsidies extracted from manufacturers, in the form of discounts, to cover trade costs as now constituted (plus profits on those costs), (b) a vigorous "power complex" which, by the way, invariably begets more "power" and (c) enhanced political prestige for the sponsoring political fathers.

When industrial management merely blinks at an entirely new combination of commercial evolutions and continues to play "In The Good Old Summertime" instead of the new swing music, the hand-writing on the wall becomes embarrassingly clear.

Industry, on the whole, in both heavy and consumer lines, has failed to look searchingly through to the ultimate consumer. Industrial managements have neglected to impart to their "commercial partners" the improved management and finance technique that they themselves have discovered is imperative for their own successful operation.

A boomerang has recoiled on management in the form of Industrial hazard No. 3.

#### Consumers

So much has been spoken and printed about rising prices, reduced consumer purchasing power and "fair trade" acts that the public is getting a liberal education in what might be called economics. Relief payments, subsidies, yard sticks and widely publicized govern-

mental condemnation of industrial royalists have generated another "power complex" in the consumer fields querying capitalistic leadership. This all has created mistrust and animosity in place of confidence and co-operation. Growing lists of professionally organized consumer leagues are true confirmation, if we evaluate them properly, of falling trust in industrial management. What farmers actually get for milk, range men for beef, bankers for dollars, finance companies for budget terms, are all widely publicized.

It is simply asking too much to expect the butt of our prevailing economic system—the consumer—to take it on the chin without asking questions. And as the distemper increases, industry's taxes are raised again and the receipts therefrom are paid out to the complainants.

A reminder is necessary that there are such things as consumer co-operatives. I don't know how far they will expand but, as matters stand, they are growing because no effective offset is supplied by industry. The motivating factor involved in this movement may be merely that of mass psychology and not economic advance but the result must be judged something like this—each new co-op customer means the average divergence from the national producer of the steady business of a family of four former buyers.

The millions of unemployed have to look at both sides of a nickel before they spend it. They enlist in the organization that appears to give them most for their money. I am sure these millions of employables blame industrial management because they can't go to work. I have talked quietly with many of them, and know. This huge human segment of our production economy is not permitted to work and produce goods; nor can it buy and consume goods.

Until our industrial management rolls up its sleeves and comes to grips with the many-sided shrinkage of former support and patronage, it goes without question that we shall see an even more powerful growth of this thoroughly aroused, recalcitrant Industrial hazard No. 4.

#### Capital

The inexorable law of supply and demand must retain its place at the banking directors table. In the over-all deceleration of both big and little business, we find that excessive amounts of virile capital, now dirt cheap, are suffering from disuse. Industry is the logical customer. But industry has apparently let capital



down. We could almost say that the idle funds of commercial banks are being eaten up by overhead.

It is paradoxical that the Washington monetary control calls for the heaviest taxes on industry in our entire history. These taxes deplete the highest-cost profits in our entire history. But because industrial management has not researched far enough to make use of this cheap capital to speed up its wheels, the money is idle, no matter how low government prices it.

But there is another aspect with respect to capital. I refer not to new money available in abundance for employment by industry, but to capital already invested. In many cases this capital is dangerously near the freezing point.

When, over the years, capital was accepted by industry from stockholders for the purpose of producing goods, it was invested mostly in plant, machinery and equipment designed for relatively continuous operation. Proper utilization here means continuous utilization. This is our determination of economic justification for this type of capital investment.

When goods were steadily produced in volume, wealth was steadily created. When goods were sold, profits were realized. These funds invested in industry were formerly hard at work earning profits. But when production shrank, the factory production slowed down and the invested capital was bereft of its intended utilization and its promised earnings. The obligation of industry to pay profits, however, still continued.

In the frenzy to keep production machinery in motion and to keep faithful labor employed great pressure has been put on sales. Even small orders were sought in order to maintain operations. In some cases the actual volume of production and sales had increased. But in many, many cases there were no net profits. Other plants, not being able to force sales, had no alternative but to bank the fires and lay off all but a skeleton crew.

The inability of the consumer to shoulder the unavoidably higher production costs and carrying charges could have but one result—diminution of production. When production recedes, "old capital" and "new capital" both suffer.

For want of consumption, production was lost; for want of production, labor was lost; for want of labor, consumer purchasing power was lost, and also capital flow, manufacturing profits, prestige and independence.

It can be said with all fairness that industrial management is guilty of omission in its proper analysis and forecast of all the essential economic factors. Under

the exhilarating drive of expanding production industrial management earned great distinction. Under the demand of moving its mass production into consumption at prices the final user could pay, it has failed. This is the kernel.

One of the greatest shortcomings in industry's long-range planning is the failure to put to work readily available capital at the point where it is most needed. When the absolute interdependence of flow of materials, labor and capital is interrupted at any one point, stagnation or drain is created for the entire system.

The national prosperity of the United States, as now constituted, and the productive activity of our banking system are linked to our industrial performance. The break-down has caused the capital lender, usually an industrial supporter, to become Industrial censor No. 5.

#### Management's Responsibility

In self-defense industrial management may state that its numerous critics are biting the hand that feeds them. Industrial management may try to shift the blame for the severe recession upon government, labor, trade, consumers and capital, jointly and severally. If industry had done a better job in economic research, however, these complainants might have been and, for that matter, still can be, its staunch proponents. Unless and until industrial management reasserts its leadership on a fundamentally improved program that searchingly treats its problems from finished goods straight through to the final consumer, this recession may well become a defeat for private control of industry.

It may be stimulating to refer to a nine-line newspaper item published in 1937 about an aggressive New York City department store. It speaks volumes for broad-gauged management.

"A continuous study to determine by systematic and periodic interviews the soundness of its policies and their practical application is being instituted by B. Altman and Company. Vice-President John C. Wood said the survey was prompted by a desire for unbiased criticism and to check basic policies."

Taking a broad-gauged view of our present national status we find, if we are unbiased, that our problem is not lack of materials, plant capacity, skilled technique in production, employable labor, low-cost capital, representative-type government or opportunity of free enterprise.

There are two other important factors, at the

*(Please turn to page 83)*

# Recent Developments in Wage Incentives<sup>1</sup>

By CHARLES W. LYTLE

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## Depression to Recession

FROM 1929 to 1937 the industries of the United States suffered both fire and plague—fire, in that markets and jobs were lost; plague, in that semi-radical experiments became epidemic. Some of the latter affected and will continue to affect incentives. For instance, wages and hours were limited by law, collective bargaining was made mandatory, company unions were forced aside, new vertical unions were born and bred to recklessness, and the whole concept of industrial relations was altered. At the same time taxes, old and new, increased tremendously but not sufficiently to balance governmental budgets.

More specifically, hours were decreased 20 per cent relative to those of 1929, and money wages simultaneously increased 20 per cent throughout all industry in the United States. In manufacturing industries alone and since 1933 the wage rates increased about 60 per cent and these advances in money wages exceeded the advances in commodity prices. In the fall of 1937 the real wage of factory labor was 37 per cent above that of 1929, but this had shrunk considerably by the end of 1937; in fact, unemployment had increased again to an alarming degree. Whether the experimental program will eventually help employees or not remains to be seen, but in the meantime employers are working overtime to adjust themselves and their policies to its resulting requirements.

## Confusion Regarding Incentives

Publicity regarding incentives, frequently inexact, was particularly confused during these eight years. First the N.R.A. made the low efficiency portion of

*It will be a good investment for management to examine its financial incentive plans critically at this time. . . . If the employees are dissatisfied with a given plan, then there is likely to be something wrong, either with the plan itself, its installation, or its administration. . . . Financial incentive plans have been applied successfully to all classes of positions in a company.—Harold Bergen, 1937.*

straight piece rate illegal and many such arrangements had to be suspended until the N.R.A. was itself pronounced illegal. As a whole the use of incentives is believed to have increased during that time because incentives were needed to keep costs down. Then the automotive industry stopped calling some of its line work "gang piece rate" and the popular magazines made it ap-

pear that all industry was going over to day work! There was certainly some shift away from piece rate, but it was mostly from gang piece rate. The editors should have explained that when the rate of production is controlled by a mechanical conveyor, it is immaterial whether the method of payment be called piece rate or day rate, the character of such work is hybrid and its payment merely needs a new name, such as "belt-paced" rate.

## Some Employer Experiments

First there was a revival of the Fisher idea of using a cost-of-living index as a means of continuous rate correction. Then there were some experiments in the direction of improved profit sharing, attempts to provide a lump financial incentive for all company employees *en masse*. Two well-known companies did this by means of a monthly bonus based on a three months' sliding scale of production gauged relative to a standard amount. This brings profit sharing into some relation to current production, but it hardly takes the place of a true production incentive and is probably not so intended.

Other experiments were made in the direction of yearly salary and constant labor cost. Geo. A. Hormel & Company of Austin, Minn., packers of pork, devised about March, 1936, a "Straight Time" plan. The weekly volume of work fluctuated badly and required much hiring and firing. By the new plan the employer pays

<sup>1</sup> Adapted from paper given October 14, 1937, before the Northern New Jersey Chapter of The Society for the Advancement of Management and reprinted as Chapter XXI in the revised edition of "Wage Incentive Methods" by Professor Lytle, published by The Ronald Press Company, New York, 1938.

a constant rate per week which amounts to guaranteed all year salary. The starting time per day is fixed but the employes may go home when they finish the work in hand. If the hours are less than thirty-six per week, they must be made up when the schedule needs more than thirty-six hours per week. Thus a debit-credit account is kept up but not carried beyond a three-year reckoning.

A somewhat similar plan is that of the Nunn-Bush Shoe Company of Milwaukee. The employe is guaranteed his total annual earning through fifty-two equal weekly payments. The amount per week is not guaranteed but varies only if and as the labor cost varies and that has been nearly constant. In other words, it is a yearly salary adjusted to keep labor cost at a constant percentage of the sales dollar. Wages rise and fall with the price level as in the Fisher scheme. The incentive lies in the hope of a labor-cost saving which is returned as a dividend at the end of each year, or negatively in the fear of a reduction under reverse conditions.

Point or man-minute plans installed by Bedaux, and others, have been put on the spot<sup>2</sup> and are likely to be improved thereby. Even the best installations of this kind are being put on the defensive.

Elsewhere the continuance and extension of incentives goes on much as it did in 1929. In fact, there are definite indications of an increasing interest in incentives.

#### Surveys

Of course, some floundering took place during the depression. For instance, in 1930 a survey of 149 manufacturers showed that:

- 22 had changed from piece rate to bonus.
- 18 indicated that they were about to do the same.
- 21 had changed from time rate to piece rate.
- 4 indicated that they were about to do the same.
- 6 had changed from bonus to piece rate.
- 6 indicated that they were about to modify their bonus plans.

#### Comparison

	1922 <i>Gemill</i>	1924 <i>N.I.C.B.</i>	1932 <i>Jucius*</i>	1935 <i>N.I.C.B.</i>
Percentage of Employes on Time Wages .....	53.5	56.1	29.4	56.3
Percentage of Employes on Incentives .....	46.5	43.9	70.6	43.7

\* The Jucius Survey covered only the most progressive companies.

<sup>2</sup> The A. F. of L. Report on Bedaux was published in the *American Federationist*, September, 1935. The newspaper publicity came in November, 1937.

These figures cannot be taken as exact, but if they have any significance they contradict the claims that there has been any general trend away from incentives. Most recent of all, the survey printed in *Factory Management and Maintenance*, October, 1937, shows that:

52.42% of the 133 plants are increasing the use of incentives.

44.35% of the 133 plants are making no change.

4% of the 133 plants are decreasing the use of incentives.

#### Union Attitudes Toward Incentives

The factors that are new are the status of unions and the soaring of costs. As we have said before, the piece rate plan carried over an association with rate cutting from the days of no standards. That evil goes with poor management regardless of the kind of incentive and should no longer be included as a characteristic of well-managed high piece rate. The latter kind of piece rate is more generous to employes than other plans except some in its own class, the multiple piece rates. Some employes never realize this but their leaders should know it and some do. At least piece rate, under its severally named varieties, has always been used more than all other plans taken together. Many unions have, therefore, accepted such piece rate especially during the prosperous portion of the business cycle, as a means of higher earning and we believe the intelligently led unions will usually continue to accept good piece rates for that reason. There will remain plenty of room for unions to bargain collectively on the relationship of rates and tasks. Sometimes all piece rates must be approved by the union. No doubt the sub-standard employe, union or non-union, greatly dislikes any incentive, and no doubt the union officers who cater to such for increased membership also dislike incentives, threaten them during the membership drive, etc., but when asked, at negotiations, for other guarantee of a fair day's effort, they have no answer—make no interference. Some employers report that the unions do go into the matter of limits, agreeing to incentives provided average incentive earnings are at least 10 per cent above day earnings. In other cases unions have asked to have a change from one incentive to another, to have straight piece rate expanded, to have all day work, etc. There seems to be no fixed policy other than to act expediently whatever the direction. Frequently this matter is never raised in negotiation. Nevertheless there is some reason to be-



lieve that certain labor leaders would like to eliminate all plans other than the simple time plan. With this in mind it may be well to explore the grounds for this attitude.

I. There is the fallacious, but depression-stimulated, "Lump of Labor" theory. This is believed by many of the unskilled and uneducated workers, probably by a few of their leaders. This theory ranges its believers definitely against all influences for efficient quantity production, and leads to restriction of output if not to sabotage. The "stretch-out" or "speed-up" of unscrupulous "engineers" has intensified this.

II. Collective bargaining, when it ignores minorities, is a leveling process. The individual is merged with his group and individual superiorities are frowned upon. Although any sound union should voluntarily raise its standard of proficiency at the bottom, it may, by the nature of things, involuntarily lower the standard at the top. Particularly during business recovery, when membership drives are intensive, it is likely that the net effect of leveling will be downward rather than upward.

The leader with membership uppermost in his mind may dislike an incentive in that it tends to show up and embarrass his less efficient members. Superior producers themselves may be restrained by this thought.

III. While a union leader is usually sincere in wanting to help his membership get higher wages, he may be embarrassed if some of his members get by themselves much more than the rank and file receive. If such individual variation leads to the loss of membership at the top, or to the refusal of desired members, the leader's aversion for incentives will become a fear of them. Coupled with this is the danger of employee preference for, and loyalty to, his employer rather than his union. In other words, if all employees in each job class were paid as well as the most efficient ones are paid through incentives, there might remain little service for the union to render.

IV. Since the very objective of an incentive is to incite the employee to do, through self-interest, just what the employer wants done—that is, to make co-operation automatic—there is under well-managed incentives little need for complaint and intercession. Where complaint and intercession constitute the life-blood of a union, as they so often do, it is evident that the incentive may seem to the leader as a threat to his own career and livelihood. The leader may really desire co-operation but he wants it through himself.

Thus there is sufficient reason for some union leaders

to oppose incentives if they deem it expedient. In 1937 some were doing so. In such cases we think it is merely a change in relative strength, not a change in belief. Conversely, the employer may tire of the struggle and allow a change against his preference as a matter of strategy. If so, it is similarly a change in circumstances rather than a change in belief.

#### Incentives Needed by Employees

On the more cheerful side we believe that most union members have welcomed, and in the long run will accept, the incentive as a means of higher earning and happier relations. H. G. Moulton<sup>3</sup> points out that for the whole United States the per capita income in 1936 was only 80 per cent that of 1929 and, in order to equal the income of 1929 by 1941, we will have to increase the productivity of industrial enterprise 70 per cent of what it was in 1936. Furthermore, it will have to be done in a working period 20 per cent shorter than that of 1929. So, even with a more co-operative trend between labor and capital, we must go farther than ever in manufacturing economies. Should the working period be further reduced and the labor cost further increased, both of which are possible, it seems evident that industry would have to go much farther in mechanization as well as in productive efficiency. The direct incentive is only a part of management technique, but since Taylor it has been a vital part. Can the union leaders miss seeing this? Some of them were coming to see eye to eye with management 1922-1929.<sup>4</sup> We hope more of them will do so again and we believe they will, as soon as employment becomes stabilized. It certainly behooves management to make every effort toward that end.

#### Better Shop Management Necessary

To accomplish this management must do several things better than formerly. It must use more scientific methods in job standardization, that is, it must take the pains to improve job conditions and methods, rather than to rush through superficial time studies. It must stop rating the time study subject on "expert" guesses. It must obtain the consent of the employee for both the job study and the subsequent changes. It must make its plan of wage payment fair and simple. It must co-ordinate its own functions and win co-operation of

<sup>3</sup> *The Management Review*, American Management Association, September, 1937.

<sup>4</sup> At the A. F. of L. 1925 Convention in Atlantic City, organized labor committed itself to the specific productivity theory of wages.

employees, individually and collectively. Many employers have done all of this, but there are far too many who have not. Since fair and reliable tasks are prerequisite to any successful use of incentives, it may be well to be more specific concerning time and motion study. In this matter average practice has lagged way behind what is known to be good practice. The primary purpose itself is often subordinated to secondary purposes, that is, real methods improvement is neglected in the hurry to fix "paper" standards. Briefly, all important jobs should be studied scientifically and slowly. The subject of the study should be made a partner in this research. The principles of correct motions should be known, or in other words, the analyst must be trained in motion study even when it is impractical to use the complete micromotion technique in deriving the task time. Elements must be as small as possible and the number of cycles finally timed must be enough to assure representative procedure. More than one subject should be studied in many cases. If the stop watch is used, continuous readings must be taken to account for all intervals and preferably a trustworthy minimum time should be taken as the base time for each element. Allowances added to these minimum times must be adequate for the class of operations involved and for the normal working conditions.<sup>5</sup>

#### Alternatives to Incentives

Suppose we are too optimistic and the union leaders do miss this view, refuse to "interweave" with capital. What will happen? Employers will of necessity push mechanization to a point which will involve greater labor readjustment and its consequent unfitting of many employees for the jobs. These new jobs will be standardized by motion study to an extent not yet visualized. More engineering graduates will be trained as foremen and supervision will be tightened. Supervision has always had to be tighter where there was no direct incentive plan. Cost finding will be improved, standardized, and used as a basis for rating every group. Both jobs and employees will be rated and re-rated at frequent intervals. Where elimination of inefficient employees is taboo, intensive training, if not driving, will be the last resort. Thus American employees will have more leisure per day and year, but less freedom on the job. They may have subsistence security but these gains may be accompanied by a static or lower

standard of living if not actually by ruined markets and by wholesale unemployment. In this last statement it is to be hoped we are mostly wrong, but we will have to make economies beyond anything in the past and how else, than by these two courses, can they be effected? American industrialists know how to create greater wealth but they cannot go forward without certainty of lower total costs per unit and the incentive is one of the most effective prerequisites.

#### "Measured" Day Work

This plan has been recently devised as a compromise between a regular incentive plan and a no-incentive time plan. It sets up an hourly rate per man-job which, in part reflects the job, and, in part, the worker. For the first part job analysis is used, that is, the requirements of each job are evaluated as to (a) skill, (b) responsibility, (c) mentality, (d) working conditions, (e) physical application, etc. These job measures, or shall we say guesses, determine the amount each base rate must exceed the fundamental base rate. For the second part, or extra compensation rate, as it is called, a combination of tangible and intangible personal virtues are graded, that is, (a) quantity of production, (b) quality of production, (c) versatility, (d) dependability, etc. These man-measures are weighted by somebody and then applied to increase the various base rates on the average from one-sixth to one-third. The composite of all this is called the measured day rate. Essential to its effect as an incentive is the periodic review and correction either up or down. For beginners this judgment-day is once a month, for others it is usually once in three months.

Most any wage plan may be good for some set of conditions and no wage plan has ever been best for all sets of conditions. As far back as 1924 we said:<sup>6</sup> "There are several measures which can be utilized to connect time wage with task:

1. Time which elapses on a good performance can be carefully recorded and checked up together with conditions of performance.
2. All production records can be kept and followed by individuals and foremen. If these two steps are taken and if adjustments in rate are made according to performance, time plan can be fully as successful as many of the more complex wage plans."

Now the main difference between this and "measured day work" is that the latter is made as complex as the

<sup>5</sup> See "Cost and Production Handbook," pp. 515-581; "Motion and Time Study," by Allan Mogensen; "Motion and Time Study," by Ralph M. Barnes; "Applied Motion Study," by F. B. & L. M. Gilbreth.

<sup>6</sup> "Management's Handbook," p. 926, "Wage Incentive Methods," p. 149.

worst of the other plans! Furthermore, this complexity brings in several intangibles. It is hard enough for an employe to face any rate readjustment every three months, but it must be much harder when his fate depends upon the bureaucratic grading of some staff assistant. Incidentally, the base is shifted from an engineer's job standardization to a personnel man's job analysis. Personnel work has become a most important function in management and job analysis is an essential part of it for rate setting, hiring, and follow-up. But the personnel department cannot consider the technicalities of equipment, tools, methods, motions, etc., and for that reason its "analysis" is inferior to engineering job standardization as a foundation for incentives. Finally, we would prefer to leave the variation of daily earning in the hands of the individual employes them-

selves. Under well-managed incentive plans an employe can blame no one but himself if he falls short of a hoped-for earning. Under measured day work he may harbor a real or imagined injustice for months and it would be a *personal* grievance too. We believe, therefore, that "measured day work" does not follow the right principles.

#### Broad Advantage of Incentives

In conclusion we will reiterate the one general advantage of all regular extra-financial incentive plans. We are reminded of this advantage by the apparent lack of it in "measured day work." We refer to the *automatic alinement of effort with a minimum of supervision*, and most of that *strictly impersonal*.

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#### Distribution Engineering (Continued from page 78)

opposite end, that are favorable: It is not lack of a sizable national market nor lack of an unsaturated market. In between these two groups of essential economic blessings, which are not duplicated in any other nation, there lies another factor that is necessary in order to effectively join up our advanced production with the high-consumption, waiting, wanting, needful market that is at our door-steps.

*This other factor is efficient distribution.*

When we cling to distribution habits that account for from 100 to 400 and even 600 per cent of finished production costs of many basic necessities of existence, passing through the same uneconomical and unprofitable channels day after day, the whole national economy suffers.

Outmoded distribution is a principal cause of our industrial, social and monetary log-jam. Almost every other division of what we know as "business" has advanced far beyond the "time-honored customs" of forty or ten or even five years ago. With but few noteworthy exceptions in detail, distribution is still fundamentally in the horse and buggy stage. Its far more progressive counterpart—constantly improved production—is nullified to a very great degree. Instead of carefully designed compensating and reciprocating functions we have a badly unbalanced industrial machine that has

now practically wrecked itself, together with the passengers and the franchise.

The time is surely here for industrial leaders to match the challenge of political leaders in the demand for every improvement, every new economy and every stimulating tool of business that can be obtained in order to take the cost-burden of *waste* out of final consumer prices and thus cause the recall of factory workers.

If the five organized "industrial hazards"—Government, Labor, Trade, Consumers and Capital—are to be prevented from further retarding the American system of free, competitive industry that has MADE this country what it is, it is high time that scientific management be applied to this bottle-neck or log-jam that is distribution.

As with production engineering, distribution engineering should be a division of industrial management for it can bring into logical integration a group of fundamentally sound existing factors that can promptly provide the impetus that business so vitally needs. Marked economies are obtainable with respect to physical costs and financial costs of moving mass production goods into consumption.

Lower consumer prices, improved trade profits and increased manufacturer volume and earnings are the realizable results.



## REVIEWS

*The Case for Democracy.* By Ordway Tead, Association Press, New York, 1938, pages x, 120. (\$1.25)

This is a clear and enlightening discussion of the struggle to attain democracy. Obviously the struggle is still going on and the process of attaining democracy must be emphasized with greater vigor if we are to offset the forces which would overthrow what we have attained.

Stress is put on the development of democracy in industry if those who render service are to have their rightful economic status. The denial of democracy in industry largely undermines political democracy and hinders the most advantageous use which can be made of our resources, productive equipment and manpower for the greatest general welfare.

Christian citizens have an opportunity and a duty, the author believes, to promote democracy and constructive public service for "the exercise of citizenship . . . is one of the major channels through which one's basic Christian beliefs are given effect." Enthusiasm for good works, which comes from a religion based on belief in the brotherhood of man and co-operative effort, is needed to make democracy a living expression of Christian ideals.

It is a book which should be read by everybody concerned about maintaining and developing democracy as opposed to systems that would overthrow the things for which humanity has struggled for centuries in order to have a good life.

The book also contains an extensive reading list on democracy by Benson Y. Landis. Study groups can use the book and the reading list for creative thinking and action in making democracy real. By ARTHUR E. SUFFERN, Federal Council of the Churches of Christ in America, New York.

*Platform for America.* By Ralph E. Flanders, Whitelsey House, McGraw-Hill Book Company, Inc., New York, London, 1936, pages ix, 118. (\$1.00)

Mr. Flanders' main thesis and argument run something along the lines which follow:

Our basic trouble today is that there is a large number of self-interest groups in the field of agriculture, industry, and labor—each of which is attempting to secure for its particular members a larger share of national income at the expense of other groups, by following a program of restricted production and price increase. This procedure is lamentable because the success of such action by a group not only diminishes the income of all other groups, but also diminishes the total national income and eventually even the net income of the "successful" group. The goal is false because, fundamentally, the best interests of each group lie in the well-being of the whole. What is needed is not restricted production of goods and services, but an enlarged production; not higher prices, but lower prices; and not partisan group programs, but a national program.

If this were fully realized, escape from our present economic dilemmas would be quite simple. Only two things would be required. The first would be an immediate discontinuance of present efforts of agriculturalists, industrialists, and labor unions to raise the prices of their respective products through production restrictions. The second thing would be to proceed on a policy of increasing production and lowering prices

through a renewed and enlarged use of better and more efficient machinery. This would accomplish what ordinarily would seem to be impossible. The increased use of machinery would bring lower costs of production, which would permit lower prices to be granted, which would raise relative wages, which would raise the standard of living, which would stimulate a greater volume of production, and which would bring profits to a level that could support adequately those industries producing capital and luxury goods whose workers are still largely unemployed. This action would automatically correct the agricultural problem in addition to the industrial problem, because the lower prices of industrial goods for farmers arising out of this would decrease agricultural costs, increase the farmer's margin of profit, raise their standard of living, increase the demand for industrial goods, and enlarge the prices of elastically demanded agricultural commodities relative to the prices of elastically demanded manufactured commodities. At the present time only the distrust of the Government, due to its reckless program of spending and debt incurrence, is holding back business men from proceeding on this enlightened path of mechanization as a way to recovery.

In developing this main thesis, the author treats in separate chapters with the problems of agriculture, unemployment, competition, and recovery. He attempts to show the failings that have attended treatment of these problems, and exactly what steps should have been taken. The concluding chapter ends with a platform for the future. This platform is based on the general thesis described above.

Mr. Flanders' book is an almost perfect illustration in itself of the difficulties he mentions in his Preface. In a book whose stated purpose is to make a rational analysis of a problem, it is difficult to accept as axiomatic many of the statements that the book sets down axiomatically.

For example, without knowing why or to whom, it is not easy to accept the statement (page 22) that business cycles are invigorating in character. Processing taxes (page 14) are criticized as taxing one group for the special advantage of another, while the maintenance of tariffs is apparently a horse of another color. In the chapter on "Neglected Elements of Recovery" such flat statements as "all that can be done by igneous and novel economic political expedient has been done" or "the idea that recovery, unemployment and a raised standard of living would result from a carefully balanced increase in prices and wages was fallacious and delayed recovery," or that the "lowering of prices is as good for the wage earner as a rise in wages, it is better for it makes more work"—are further illustrations of a debatable thesis stated as an axiom. Throughout the book, there are many other examples of a similar sort.

The book has the virtues of being concise and readable. Certainly it can be counted upon to stimulate further argument. If such argument leads finally to the objectives as stated in the Preface, the book will have performed a useful service. By JOHN S. KEIR, Dennison Manufacturing Company, Framingham, Mass.

## Erratum

Please note a correction for the article by Professor Sumner H. Slichter, "The Contents of Collective Agreements," published in the last issue.

On page 18, Column 1, the last line should read "spend almost half as much on automobiles as they do on housing."